



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/756,098	01/12/2004	Alan E. Waltho	P17915X	2964
25694	7590	12/01/2005	EXAMINER	
INTEL CORPORATION P.O. BOX 5326 SANTA CLARA, CA 95056-5326			A, MINH D	
			ART UNIT	PAPER NUMBER
			2821	

DATE MAILED: 12/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

52

Office Action Summary	Application No.	Applicant(s)	
	10/756,098	WALTHO, ALAN E.	
	Examiner	Art Unit	
	Minh D. A	2821	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 September 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11, 13, 17-19 and 21-28 is/are rejected.
- 7) ☒ Claim(s) 12, 14-16 and 20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 6, 11, 17 are rejected under 35 U.S.C. 102(e) as being anticipated by Lynch et al (US 6,952,190).

Regarding claim 1, Lynch discloses an apparatus comprising:

a very high frequency (VHF) antenna; and a frequency selective surface (FSS) (10) structure adjacent to the VHF antenna, wherein the FSS structure (10) includes: a ground plane (14); a first conductive (12) via coupled to the ground plane (14); and a first conductive plate (12) coupled to the first conductive (18) via, wherein the FSS structure (10) has a band gap frequency in the VHF band. See figures 1a-2e, col.1, lines 20-67 to col.5, lines 1-35.

Regarding claim 6, Lynch discloses wherein the FSS structure further includes a dielectric material between the first conductive plate and the ground plane. See figures 1a-2e.

Art Unit: 2821

Regarding claim 11, Lynch discloses wherein the first conductive plate(12) is substantially square-shaped, rectangular, triangular, hexagonal, or circular. See figure 1a-2e.

Regarding claim 17, Lynch discloses an apparatus, comprising'. very high frequency (VHF) antenna; and a frequency selective surface (FSS) structure adjacent to the VHF antenna and tuned to the operating frequency of the VHF antenna, wherein the FSS structure includes a conductive back plane; a conductive column coupled to the conductive back plane and a conductive pad coupled to the conductive column, wherein the thickness of the FSS structure and the surface area of the conductive pad are sized to suppress radio frequency (RF) surface currents in the VHF band from propagating along the conductive back plane. See figures See figures 1a-2e, col.1, lines 20-67 to col.5, lines 1-35.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 2-5, 7-10, 13, 18-19, 21-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over by Lynch et al (US 6,952,190) in view of Lynch et al (US 2004/0075617A1).

Regarding claims 21 and 25, Lynch discloses a system comprising; an aircraft antenna coupled to receive radio frequency (RF) signals and a frequency selective surface (FSS) structure adjacent to the aircraft antenna that includes: a ground plane; a conductive via coupled to the ground plane', and a conductive plate coupled to the conductive via except a carrier frequency ranging from about 118 megahertz (MHz) to about 137 MHz. See figures 1a-2e, col.1, lines 20-67 to col.5, lines 1-35. However, Lynch discloses all limitations recited in figure 2d, col.2, lines [0026] to [0027]. It would have been an obvious matter of design choice to employ a different frequency such as suggest of Lynch in the FSS structure of Lynch to provide the range of band gap frequency since it capable to providing a high impedance surface for transmitter and receiver antenna.

Regarding claim 22, Lynch discloses the system comprising a wireless receiver coupled to receive the RF signals from the aircraft antenna, and wherein the receiver is part of an aircraft very high frequency (VHF) communications system. See figures 1a-2e.

Regarding claim 26, Lynch discloses wherein a wireless receiver coupled to receive the RF signals from the aircraft antenna, and wherein the receiver is part of an aircraft instrument landing system (ILS) or an aircraft Very High Frequency Omni range (VOR) system. See See figures 1a-2e.

Regarding claims 2-5, 8-10,13, 18, 23-24, and 27-28, Lynch discloses the claimed of invention except wherein the band gap frequency of the FSS structure ranges from about 108 MHZ to about 118 MHz or range about 118 MHZ to about 137

Art Unit: 2821

MHz or 113 MHz or about 127 MHz or the FSS structure has a thickness ranging from about 0.5 centimeters (cm) to about 1.3 cm or a ranging from about 0.5 centimeters (cm) to about 1.3 cm and a diameter of about 0.16 cm. the first conductive plate has a thickness of about 0.005 cm or a length of about 3.8 cm, and a width of about 3.8 cm. However, Lynch discloses all limitations recited in figure 2d, col.2, lines [0026] to [0027]. It would have been an obvious matter of design choice to employ a different frequency or different thickness and diameter such as suggest of Lynch in the FSS structure of McKinzie to provide the range of band gap frequency and the range of thickness since it capable to providing a high impedance surface for transmitter and receiver that are coupled to the antenna.

Regarding claims 7, 19, 24 and 28, Lynch discloses the claimed invention except for a dielectric material includes an ionizing particles. It would have been obvious to one having ordinary skill in the art at the time the invention was made to employ an ionizing particles, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice.

Allowable Subject Matter

5. Claims 12, 14-16 and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The prior art does not teach that, wherein the first conductive plate is formed overlying a first surface of the dielectric material and the ground plane is formed

Art Unit: 2821

overlying a second surface of the dielectric material, and a first printed inductor overlying the first surface of the dielectric material and coupled to the first conductive plate and the first conductive via, wherein the first printed inductor and the first conductive via are formed substantially at the geometric center of first conductive plate recited in dependent claims 12 and 20.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. McKinzie III (US 2002/0167456) and Wilhelm et al. (US 2003/0142036) are cited to show a FSS structure for band gap frequency.

Art Unit: 2821

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Minh A whose telephone number is (571) 272-1817. The examiner can normally be reached on M-F (5:30 –2:30 PM).

If attempts to reach the examiner by telephone is unsuccessful, the examiner's supervisor, Don Wong, can be reached on (571) 272-1834. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9306 for regular communications and (703) 872-9319 for final communications.

Any inquiry of a general nature or relating to the status of this application should be directed to the Technology Center receptionist whose telephone number is (571) 272-1553.

Examiner

Minh A

Art unit 2821

11/22/05

Shih-Chao Chen 11/28/05
SHIH-CHAO CHEN
PRIMARY EXAMINER